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ABSTRACT

Techniques for observing the classroom behavior of teachers and students are examined. These techniques provide a framework for analyzing and understanding classroom interaction, for making decisions about what should be happening, and for changing instructional behavior when it is necessary. The observation methods allow collection, analysis, and presentation of accurate, objective, useful, and persuasive data. Persuasive data contain no value judgments. One method is the selective verbatim technique, which involves having the observer record what is actually said within the confines of a category previously specified by the teacher. Some common categories for selective verbatim include: teacher questions, teacher responses to student statements, teacher directions and assignments, teacher responses to questions, verbal mannerisms, teacher reward and praise statements, teacher criticism, student responses to teacher questions, student questions, and student initiated statements. Examples are presented as illustration. A seating chart can be the basis for several types of informal records about the teachers' and students' classroom behavior. It is primarily used to measure nonverbal behavior, but it is sometimes useful for measuring verbal behavior. The basic element is a diagram, examples of which are included. Seating charts are useful for analyzing "at task" behavior: data indicating whether or not individual students were engaged in the task or tasks the teacher indicated were appropriate. A verbal flow chart is one way of analyzing how classroom procedures inhibit, encourage, or allow students to participate in classroom interactions. A list of common teaching activities and a technique for recording them for analysis is included. (SW)

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# CLASSROOM OBSERVATION TECHNIQUES

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## INTRODUCTION

Faculty at institutions of higher education are usually expert in their disciplines. They have devoted years to organizing and accumulating knowledge, and to communicating relevant new knowledge and theories to their colleagues through written or oral means. Although faculty have not generally had any specific preparation for the teaching activities they are expected to perform, they can use classroom observation techniques as a non-threatening means for improving their instructional practices with the help of a colleague or self-analysis using audiotape. The thoughts which follow are based upon two assumptions: 1) Teachers generally operate with plans and intentions which are appropriate. They do not set out deliberately to do a bad job. 2) Most teachers are aware of areas of difficulty within their classroom but need systematic observation data to identify specific problems and to find solutions to the problems they already recognize. Only when teachers are able to do what they intend can much progress be made toward doing what should be done. Whether an instructor has years of teaching experience or is just beginning, these techniques provide a framework for analyzing and understanding classroom interaction, for making decisions about what should be happening, and for changing instructional behavior when it is necessary.

Successful classroom observations are those which result in productive changes in teacher behavior. There is no single most appropriate technique or set of techniques that everyone should use in observing, just as there is no panacea that will solve all the problems faced by professional educators. This paper presents several techniques which can guide observations. Other techniques are described in publications by Acheson and Hansen, 1973, and Acheson and Gall, 1980. The purpose of these techniques is the collection, analysis, and presentation of accurate, objective, useful, and persuasive data which can help teachers to change their own behavior.

## OBSERVATION & PERSUASIVE DATA

It may seem strange to teach people to observe when observation is something we always do, using whatever senses are necessary to receive messages about the world around us. The fact that we constantly observe is one of the main hurdles which professional educators must overcome when they take on the task of observing themselves and others in a classroom setting. We observe so much, so often, that we frequently observe everything and record nothing. We are so accustomed to seeing the behaviors of individuals in a total perspective that it is difficult to note only those specific behaviors which, when isolated, might be the key to gaining insight, to changing a behavior or to solving a problem.

Systematic classroom observation requires the skilled use of techniques to identify and record significant behaviors that can be heard and seen in a learning environment. Observation, thus, has a specialized meaning in education. The purpose for the observation limits the focus and range of techniques appropriate for recording what is observed.

There are many procedures that may be useful in observing a particular behavior. Selecting and adapting established recording procedures for a given situation or inventing an original device to meet a unique need can provide "persuasive data."

Persuasive data contain no value judgments. If a colleague acts as an observer, inferences and generalizations he/she may have formed about the activity are not included in the data presented to the teacher; data which could lead the teacher to the same inferences are presented. This data, in addition to being value free, must be specific and presented in a form that the teacher can understand and use. Persuasive data must be information which the teacher feels is necessary and relevant. A teacher concerned about his/her ability to ask good questions is not seeking data about lecturing techniques. The observer needs to develop skills for gathering and sharing data in a persuasive manner, and the teacher being observed needs to feel that the data produced are relevant, important, and useful.

This paper examines some devices for gathering information that can provide a factual basis from which the teacher can develop subsequent classroom objectives, strategies, and techniques. For example, selective verbatim techniques are generally useful and can be adapted to fit specific situations.

## SELECTIVE VERBATIM

Selective Verbatim techniques simply have the observer record what is actually said within the confines of a category previously specified by the teacher. Some common categories for selective verbatim include: 1) teacher questions, 2) teacher responses to student statements, 3) teacher directions and assignments, 4) teacher responses to questions, 5) verbal mannerisms such as "OK," "you know," "all right", 6) teacher reward and praise statements, 7) teacher criticism, 8) student responses to teacher questions, 8) student questions, and 9) student initiated statements. Faculty can use this technique by audiotaping a class, taking the selective verbatim from the tape, and analyzing the resulting information. Verbatim recordings provide teachers with the opportunity to compare "what they really wanted" with "what they actually got."

Segment I (Selective Verbatim)

Teacher Questions--4:30-4:45

4:31 What would acceleration of system be?
4:31 Which direction?
4:32 Anybody have an approach to finding force?
4:32 It's just what?
4:33 How many people agree?
4:33 What do you think it would be?
4:33 Which direction would that be?
4:34 What's total magnitude of force on 10 kg block?
4:35 What's total force on 10 kg block in this case?
4:39 What are all forces acting on ladder at this point?
4:40 Which direction is frictional force between ground and ladder?
4:40 Where would I assume coordinate system?
4:41 What are all the forces in the x direction?
4:41 What are all the forces in the y direction?
4:42 Are we or are we not counting the man?
4:42 What's first thing if want to determine torques?
4:43 How about normal force? What's the torque about point A?
4:43 How about frictional force?
4:43 What about the man?
4:44 How go about determining lever arm?
4:45 What cosine of angle? (repeats)
4:45 Which direction would that be? Clockwise or counter-clockwise?
4:45 How about ladder? What would its torque be?

Student Questions

4:30 Multiply by 1/6?
4:42 Would normal be positive?

Segment II: Selective Verbatim

Teacher Questions--4:30-4:45

4:30 What would be normal force?
4:32 Who put up problem?
4:34 What would be average force?
4:35 What would be average force?
4:36 How much work have I put in the system?
4:37 What form is it in when...at rest?
4:37 What is kinetic energy when it comes to this side?
4:39 What is total energy in system?
4:42 Questions on this problem? (waits)

Student Questions--4:30-4:45

4:31 Does it have kinetic energy when it starts sliding?
4:34 What is k?
4:36 ...wouldn't that be half the force?
4:40 What does $kx^2/2$ equal?

In the above examples of selective verbatim, teacher and student questions are presented for two fifteen minutes segments. On the basis of the feedback from the first segment this teacher decided that his questions were too narrow (and so were his students' questions) and that he was probably asking too many questions to invite much depth of thought. Segment II was taken in the same class one week later. Teacher questions were slightly more complex (and so were student questions). The frequency of teacher questions decreased while student questions increased. This teacher continued to manipulate both the frequency and complexity of his questions until he reached the balance he desired.

Analyzing Teacher Questions

1) How many questions actually requested a student response?

2) What patterns of questioning were revealed?
   (a) Did all questions start with the same phrase?
   (b) Did they all require one-word answers?
   (c) Does the teacher ask multiple questions without giving students an opportunity to respond? (How do they know which question to answer?)

3) What thought levels were demanded in the response?

4) What would be the effect if the teacher could not use certain words, such as "what;" or questions which start with a verb, or the phrase, "Do you think."?

5) What is the relationship between the teacher's intentions and the questions asked?

6) What is the relationship between lesson content, objectives, and the questions asked?

7) What is the relationship between the vocabulary used and the students' verbal ability?

8) Is there a relationship between questions asked and student participation patterns?

9) Is sufficient time allowed between questions for students to respond?

Analyzing Student Talk

Although most selective verbatim categories "select" teacher verbal behaviors for recording; a substantial portion of classroom "talk" is by students--generally 1/4 to 1/3 of the total. This category is the most difficult to observe in a classroom. Most observations of student comments are made from audio recordings of interaction, although lessons in which one-word or short-phrase answers predominate can easily be recorded by an observer in the classroom. Some possible categories of student talk are: student questions, student responses to teacher questions, requests for information, "off the subject" comments.

SEATING CHART RECORDS

Seating charts can be the basis for several types of informal records about the teachers' and students' classroom behavior. It is primarily used to measure non-verbal behavior, but it is sometimes useful for measuring verbal behavior. The basic element is a diagram of the seating locations.

Diagrams enable the observer to record the non-verbal interaction in a classroom without demanding that value judgments be made at the time of observation; these can be made after analysis of the data. No "ideal" or "perfect" record exists--each collection of data must be analyzed in terms of specific objectives and predictions of appropriate student behaviors for the given

lesson in light of available knowledge about individual or group projects. No standard form exists. In each case, the observer creates the observation form by producing, on paper, the seating chart of the class or group to be observed.

"At Task"

Seating charts are useful for analyzing "at task" behavior. The intent of At Task observation is to provide data for the teacher which indicates whether or not individual students during a classroom activity were engaged in the task or tasks which the teacher indicated were appropriate. It is obvious that the observer must be acquainted beforehand with what the teacher expects the students to be doing during a given classroom period. In those classrooms where one task is expected of all students, there is no problem (e.g., a chemistry lab, drafting studio, etc.). But in the many classrooms where students are able or expected to do a variety of tasks, some preparation is necessary before the observer can use this technique.

Example of Use

The observer constructs a chart which represents a seating pattern of the students in the room that day. When the lesson begins, the observer systematically examines the behavior of each student for a few seconds in order to determine if the student is "at task," i.e., doing what the teacher considers appropriate. If so, this is marked with an A in the box on the seating chart meant to represent the student. If the student is not "at task," the observer indicates this by recording an S, R, O, etc., using a code adapted to the behavior observed. A typical code for a group of students in a lecture might be:

| | |
|---|---|
| W - Writes | R - Reads |
| T - Talks with neighbor | F - Fidgets, bounces |
| O - Observes, observer | S - Sleeps |
| D - Dazed, staring | A - Looks around |
| L - Listens/watches | C - Looks at clock |

The process is repeated at three or four minute intervals for the duration of the lesson using the same letter code to indicate observed behavior but changing the number to indicate the sequence of observations. As an aid in the analysis of the data, the times that the observations were made are noted somewhere on the chart.

**At Task Analysis**

| Student 1 | Student 2 | Student 3 | |
|---|---|---|---|
| L, L, L, L/ | L, L, L, O/ | L, L, L, A/ | 10:10 |
| C, L, F, L/ | F, L, L, W/ | F, L, A, F/ | 10:13 |
| L | W | F | 10:16 |
| | | | 10:19 |
| | | | 10:29 |
| | | | 10:32 |
| Student 4 | Student 5 | Student 6 | 10:35 |
| L, L, L, W/ | L, L, L, W/ | L, S, W, W/ | 10:38 |
| D, F, T, L/ | L, R, T, L/ | L, L, F, W/ | 10:40 |
| W | L | W | |

Categories used will differ from observation to observation. The observer systematically starts with the same student every time he/she makes the round of the class. The same sequence is followed in observing the students in order to preserve the time sampling nature of the technique.

It is assumed that either the teacher or the observer will take At Task data as recorded on the form and summarize it. The categories are listed down the side of the page and the time of each observation is recorded across the top. One simply counts the number of students who were exhibiting a specific behavior at one specific time and records that number in the appropriate spot. This procedure is repeated for each observation made.

Summary

| | | |
|---|---|---|
| 10:10<br>6L | 10:29<br>2L, 2F, 1D, 1C | 10:46<br>2L, 3W, 1F |
| 10:13<br>5L, 1S | 10:32<br>4L, 1F, 1R | |
| 10:16<br>5L, 1W | 10:35<br>1L, 2F, 1A, 2T | |
| 10:19<br>1L, 3W, 1-O, 1A | 10:38<br>3L, 2W, 1F | |

Verbal Flow Chart

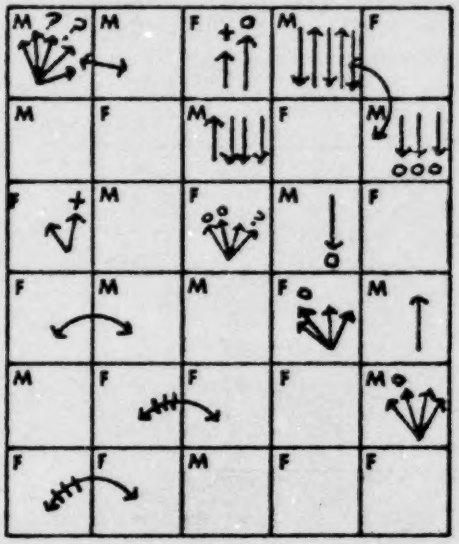
Teachers should be aware of both their verbal and physical responses to the students in their classrooms. Often they are not. A verbal flow chart is one way of analyzing how classroom procedures inhibit, encourage, or allow students to participate in classroom interactions.

Examples of Use

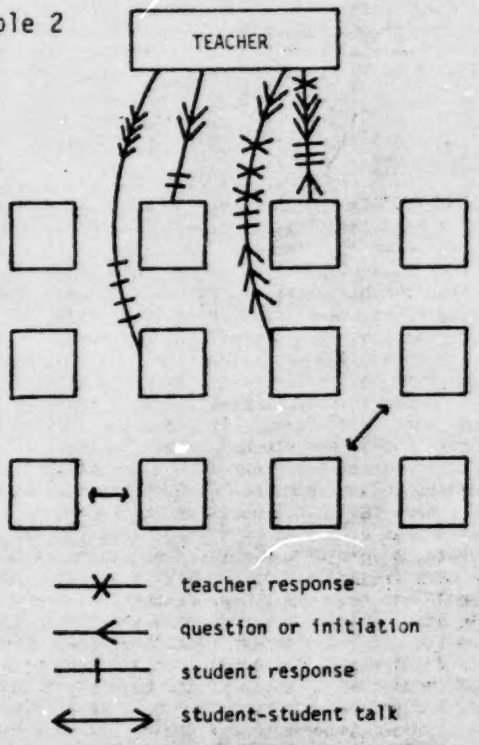
The basic form for the chart is again a representation of the students' seating pattern. Arrows are used as a basic symbol to indicate the categories of behavior. When students initiate a comment, an arrow is drawn from the box which represents that student toward the teacher (as shown in the examples). When the teacher initiates the interaction, the arrow is from the teacher into the box. The second barb on an arrowhead can represent a response. If a student initiates several comments, several arrows can be drawn, or more than one barb on an arrow. If a teacher asks several questions of the same student, several arrows or several barbs on one arrow are drawn toward the student, each terminating in the same box. A question mark on the end of a barb can show a question vs. a comment. If a teacher treats a comment by a student as irrelevant or inaccurate, a zero or a minus can be placed at the end of the barb (regardless of the way it is pointing) to represent that response by the teacher. A plus can be used to show positive response. Social comments made between students not for the benefit of the entire class and not within the context of the ongoing discussion are indicated by a curved tie between the two students. A cross bar can represent each repetition. Straight arrows between students can represent class discussion. Additional subscripts and other marks can be used to reflect other categories of responses made by individual students. Symbols and categories may be created in response to an expressed need by the teacher for such information. For instance, the observer might note when various students responded. This is done by

recording either a time or a sequential number next to the arrow. Such data might show that the teacher relies on different students in an obvious pattern or at different times during the lesson.

Example 1



Example 2




A single observation of verbal flow in a classroom discussion is an insufficient basis for making drastic changes in behavior. How a teacher deals with areas of the room may vary from day to day. However, most of us ignore certain areas or certain students rather consistently.

This paper has presented only a few techniques for observing the classroom behavior of teachers and students. There are many others--and many variations on the ones that have been described. Choosing the most appropriate recording device for a given situation requires some thought.

The following table lists common teaching activities and a technique for recording them for analyses.

| Strategy | Self-Observational Device |
|---|---|
| Lecture: explanations or directions | Audiotape recording, selective verbatim |
| Discussion, seminar | Verbal flow chart made by student or by teacher using tape recording |
| Demonstration | Videotape recording |
| Individualized instruction: seatwork, laboratory, shop, studio | Classroom traffic (movement chart drawn by aide) |
| Simulations, games, self-instructional materials | "At task" chart prepared by teacher as students participate |
| Heuristic approaches: problem solving, inquiry lessons, guided discovery. | Selective verbatim of teacher or student questions taken from tape recording. |

Teaching is complex, difficult, and important. Most faculty have become aware that the ability to interact with one's colleagues is no guarantee of an ability to communicate with inexperienced freshmen, that knowledge of a discipline is not the same as teaching it, and that research talent does not necessarily translate into classroom success. Too often, faculty learn about their teaching through a painful process of trial and error when they could be using classroom observation techniques to refine instructional practices.

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